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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,469	07/09/2001	Ali Rusta-Sallehy	9351-70	4143

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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,469

Applicant(s)

RUSTA-SALLEHY ET AL.

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) 16 and 24-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-23 is/are rejected.
- 7) ☒ Claim(s) 3-6, 14, 18 and 19 is/are objected to.
- 8) ☒ Claim(s) 1-37 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2001 and 20 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "comprises", "means", and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities: in replacement paragraph [0030], 8th line, "mean" should be changed to "means" after "delivery". Also, the Tables that were previously presented in original paragraph [0030] are not present in replacement paragraph [0030], which may lead to editorial deletion of these Tables. Throughout the original specification, as well as replacement paragraphs [0006], [0031], and [0037], several of the chemical compounds continue to be written with numerals that should be written as subscripts. Appropriate correction is required.

Claim Objections

3. Claims 3-6, 14, 18, and 19 are objected to because of the following informalities: throughout claims 3-6, several of the chemical compounds continue to have numerals

that should be written as subscripts. In claim 4, 2nd line, "and" should be added at the end of this line. In claim 14, 4th line from the end of the claim, "means" should be changed to "device" after "supplying", for consistency with "first supplying device" earlier in the claim. In claim 18, last 2 lines, "the" should be deleted before "unreacted hydrogen", "oxygen", and "exhaust gas", as these terms lack proper antecedent basis. In claim 19, 5th line, "the" should be deleted before "excess hydrogen", as this term lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-15 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. (US 6,592,741).

Nakanishi et al. disclose a fuel gas generation system, in which the system operates via supply of a metal hydride to a reactor, and further includes the following structural features: a storage means 21 for storing one of a plurality of metal hydrides, including borohydrides; a storage means for water to be supplied via injector 3; a reactor (23,71) provided with a catalyst (catalytic burner); a supplying device between the storage means 21 and the reactor 23; a water delivery (recovery) means 91 to recover water (return line); a return line to supply the recovered water to the solution; a control unit 10 that serves as a flow controller, in combination with a gas flow sensor 4, pressure sensor 11, and valve 12; and a heat exchanger, including a heat supply and a cooling system having piping 7, pump 8, and a heat dissipator 9 (abstract; column 1, lines 14-44; column 2, lines 6-67; column 3, lines 1-20; column 4, line 18 through column 6, line 22; column 9, line 45 through column 20, line 39; and Figures 1-12).

Although not specifically disclosed by Nakanishi et al., one of ordinary skill would have recognized that the injector is the "first supplying device" for injection of water, such that this structure is "connected between" the storage means and the reactor, as the injector is located between the bottom portion of the reactor and the storage means.

With regard to the claim limitations that relate to the specific solutions that flow through the structural elements of the apparatus (claims 1-14, 17-19, and 21), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably

distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Regarding the specific reactants (hydrides), the freezing point depressing agent(s), the alkaline additive(s) etc., these limitations are directed to a manner of operating the chemical hydride hydrogen generation system. The examiner notes that neither the manner of operating a disclosed device nor material/article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from the prior art. See MPEP 2114 and 2115. Further, the examiner notes that intended use limitations, such as "for storing/supplying a chemical hydride solution" do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim." Also see *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) that states "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function". See MPEP 2114. To overcome rejections based on these established case laws (as an example), the 3rd lines of independent claims 1 and 14 could be changed from "a storage means for storing a chemical hydride solution..." to "a chemical hydride solution storage means".

Terminal Disclaimer

7. The terminal disclaimers filed on September 20, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration dates of 1) US Patent No. 6,727,012; 2) US Patent No. 6,737,184; and 3) any patent granted on copending US Application Serial No. 09/986,636 have been reviewed and are accepted. The terminal disclaimers have been recorded.

Response to Arguments

8. The examiner acknowledges the applicants' amendment, corrected/replacement drawing sheet, and three terminal disclaimers, all of which were received by the USPTO on September 20, 2004. The corrected/replacement drawing sheet and amendments to the specification overcome prior objections to the drawings. However, some objections to the abstract, specification, and claims remain and/or were raised by the amendment (see paragraphs 1-3 above). All three terminal disclaimers have been reviewed and have been approved (see paragraph 7 above). The applicants have amended claims 17-23 to be dependent from independent claim 1, such that claims 17-23 are also now under consideration. Claims 1-15 and 17-23 are currently under consideration in the application.

9. Applicants' arguments with respect to claims 1-15 (now claims 1-15 and 17-23) have been considered but are moot in view of the new ground(s) of rejection.

The applicants are referred to the newly underlined paragraphs above, in addition to the replacement of 35 USC 102(e) rejections with 35 USC 103(a) rejections. The examiner respectfully disagrees with the applicants' statements on pages 18-22, as the solutions are not a portion of the claimed structures (in particular, see newly underlined portions of paragraph 6 above). As a result, whether or not the systems include solutions or powdered materials within the apparatus, as the applicants chiefly argue, is not pertinent to structural limitations in apparatus claims (see case law citations in paragraph 6 above).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 11/16/04*
Examiner
Art Unit 1725

KPK
kpk
November 16, 2004